

Amendments to the Claims

Please amend the claims according to the following listing of the claims.

1. (Previously Presented) A process for carrying out a high-temperature reaction, in a reactor comprising a reaction chamber and a quench area, in which starting materials are supplied to the reaction chamber through channels of a burner block, where in the reaction chamber the high-temperature reaction having a short residence time takes place at a temperature of at least 1500°C and the reaction mixture is subsequently rapidly cooled in the quench area, characterized in that in the quench area firstly a direct cooling to a temperature in the range from 650°C to 1200°C takes place by supply of an evaporating quench medium and subsequently in the quench area an indirect cooling in a heat exchanger takes place.
2. (Previously Presented) A process as claimed in claim 1, characterized in that the starting materials are premixed.
3. (Previously Presented) A process as claimed in claim 1, characterized in that the direct cooling takes place to a temperature in the range from 700°C to 1000°C.
4. (Previously Presented) A process as claimed in claim 1, characterized in that the direct cooling takes place in one or more stages.
5. (Previously Presented) A process as claimed in claim 1, characterized in that the quench medium is water or a hydrocarbon or a hydrocarbon mixture.
6. (Previously Presented) A process as claimed in claims 1, characterized in that the indirect cooling takes place to less than 300°C.
7. (Previously Presented) A process as claimed in claim 1, characterized in that the indirect cooling is utilized for the preheating of the starting materials or for the generation of steam.
8. (Canceled)

9. (canceled)
10. (Canceled)
11. (Canceled)
12. (Canceled)
13. (Canceled)
14. (Canceled)
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16. (Canceled)
17. (Canceled)
18. (Canceled)
19. (Previously Presented) A process for the scale-up of a reactor as claimed in claim 11, characterized in that for a throughput enlargement the internal diameter of the reactor is enlarged and the gap size at the transition from the reaction chamber to the quench area is kept constant.
20. (Previously Presented) A process as claimed in claim 1, wherein the high-temperature reaction produces acetylene by partial oxidation of hydrocarbons using oxygen.
21. (Canceled)
22. (Previously Presented) A process as claimed in claim 1, characterized in that the direct cooling takes place to a temperature in the range from greater than 800°C to 1200°C.
23. (Previously Presented) A process as claimed in claim 1, characterized in that the direct cooling takes place to a temperature in the range from 850°C to 1200°C.

24. (Previously Presented) A process as claimed in claim 1, the evaporating quench medium evaporates completely.
25. (Previously Presented) The process as claimed in claim 20, wherein the acetylene yield is about 29% based on carbon.
26. (Canceled)
27. (Previously Presented) A process comprising passing a product stream of a reaction, conducted at a temperature of greater than or equal to 1500°C, and having a residence time of from 1 to 100 ms, through a quench area, wherein the product stream has a residence time in the quench area of from 1 to 100 ms, and wherein, within the quench area, the product stream is first cooled to a temperature of from 650 to 1200°C with an evaporating quench medium, and then subsequently cooled in a heat exchanger.